

REMARKS

Applicant respectfully requests reconsideration and allowance of the subject Application. Support for the foregoing amendments can be found in the original specification, claims or drawings – no new matter has been introduced. Accordingly, Claims 1-3, and 5-21 are pending as listed above.

35 U.S.C. § 103 CLAIM REJECTION

Claims 1-3, 5, 6, 8, 9, and 12-20 & 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,473,411 B1 issued to Kumaki et al. (hereinafter, Kumaki) in view of U.S. Patent No. 6,160,804 issued to Ahmed et al. (hereinafter, Ahmed). Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kumaki and Ahmed, further in view of U.S. Patent No. 5,929,817 issued to Umeda et al. (hereinafter, Umeda). Applicant respectfully traverses the rejection.

DISQUALIFICATION OF PRIOR ART

Subject matter disclosed in Ahmed patent is disqualified as prior art under 35 U.S.C. § 103(a), as Ahmed qualifies as prior art under 35 U.S.C. § 103(f) or (g) and was commonly owned with the present claimed invention of Application No. 09/210,213. That is, the present claimed invention and Ahmed were, at the time Application 09/210,213 was made, owned or subject to an obligation of assignment by Lucent Technologies.

Therefore, the Ahmed patent is disqualified from being used in a rejection under 35 U.S.C. § 103(a).

ABOUT THE CLAIMED INVENTION

The claimed invention is directed to a method for wireless access to packet-based networks by mobile devices. The method involves host-based routing and permits handoff of a mobile device between domains with no perceived change of address. The method of the claimed invention provides a mobility solution; handoff notifications to nodes outside of the local domain or subnet, such as to the home agent and the correspondent node, are substantially minimized, making the majority of mobile device handoffs between base stations transparent to the home agent and the correspondent node.

A purpose of the present claimed invention is to provide a method of routing packets to a mobile device within the same packet-based subnet. There is no centralized mechanism for routing; rather, routing takes place over a distributed network of routers. In the present claimed invention, data packets arrive either at the old base station (prior to handoff) or at the new base station (after handoff), thus no duplicate packets are sent over the wireless link. Handoff occurs at the network level, which minimizes the need for handoff notification to nodes outside of the subnet.

REFERENCES

The Office cites Kumaki, Ahmed and Umeda in the 35 U.S.C. § 103(a) rejection. Applicant restates that the present claimed invention and the Ahmed patent, were, at the time Application 09/210,213 was made, owned or subject to an

obligation of assignment by Lucent Technologies, Inc. Therefore, the Ahmed patent is disqualified from being used in a rejection under 35 U.S.C. § 103(a).

Kumaki discloses a mobile supporting router (MSR) device to be connected to Internet accommodating mobile terminals that carries out handoff of a mobile terminal from one base station to another at the **data link layer**, thereby requiring the management of two networks, the data link network and the IP network. Handoff occurs by switching transfer route at the data link level as to accomplish faster handoff than conventional techniques at the network layer. Kumaki also teaches that data packets are transferred to both the new and old base stations

Kumaki does not teach for handoffs at a network layer and does not teach for forwarding of packets to a single location. Routing is managed by an MSR, and therefore Kumaki does not teach host-based routing that is decentralized amongst nodes in a subnet.

Ahmed teaches mobility management in systems that include multimedia applications in a networking environment. The method taught by Ahmed provides network architecture to deal with cellular/PCS networks that require significant signaling overhead during call set-ups and handoffs. Ahmed teaches network architecture, including a **subnetwork layer** (Col. 9, lines 17-19). The subnetwork frame size lies somewhere between IP (network layer) and RLP layer frame size (Col. 9, lines 28-29). Ahmed teaches a subnetwork layer included specifically to handle mobility management (Col. 10, lines 16-18).

Ahmed does not teach for handoff at a network layer, nor a data link layer, but rather a protocol layer that is located above a data link layer with respect to the protocol associated with communications between network nodes.

Umeda teaches an arrangement for eliminating disconnections of communications at the time of handovers. Umeda uses a composition device connected with the base stations as part of a sub-system device for a mobile communication system.

Umeda does not teach host-routing as a means to preserve mobility, and Umeda does not teach for handoff at a network layer. Umeda makes no mention of the layer in which handovers are processed. Conventional handovers as taught by the prior art involve handoff at the data link layer, and therefore it must be assumed, absent a statement to establish another means of handoff, that Umeda teaches handovers at the data link layer.

CLAIM ANALYSIS FOR § 103 REJECTION

Independent Claim 1 recites a method that allows a packet-based network to establish a routing path to a mobile device having an address to receive packets, where the first address corresponds to a mobile device attached by a base station in one domain, and a home agent utilizes a second address for the mobile device when the mobile device is attached to the packet-based network through a base station in a separate (excluded from the first) domain. Base stations are fixed. When packets arrive at a domain route router, the router knows that a mobile host

is present (by the subnet portion of destination address) in its domain and forwards it to the correct base station. Subsequently, packets conveyed over the Internet for delivery to mobile device are routed to the domain route router based on the subnet portion of the mobile devices' IP address. There is no burden on routers to know mobile hosts location because it uses a default route if it doesn't receive path set up messages.

Specifically, the method of Claim 1 involves launching a path set up from a destination node (mobile device) that is received at a first router over first interface, and creating a routing entry that corresponds destination node to the first interface. When a packet is received it is forwarded over the first interface after first router associated destination node address with routing table entry. And forwarding a handoff update path setup message – **for handoffs processed at a network layer** – when moving from second wireless base station to a first wireless base station if the wireless device is handed off from first base station to second, the message is used to alter routing table entries for routers of subnet, wherein the first address continues to be used for the destination node (mobile device) if the second base station is in the same subnet.

The cited references do not teach or suggest this method as neither Kumaki nor Ahmed process handoffs at a network layer, nor teach a routing mechanism not dependent on a centralized router. Furthermore, Ahmed is disqualified as a reference on the basis of common ownership/assignment with the present claimed invention.

The Office recognizes that Kumaki fails to teach for **handoffs processed at a network layer**, but argues that Ahmed discloses a subnetwork layer D (Col 11, lines 4-12) for handoffs processed. The Office suggests that a subnetwork layer as taught by Ahmed could be used in Kumaki's system layer for handoff processing as provided in Applicant's Claim 1. (Office Action, Page 3, paragraph 3). Applicant respectfully disagrees.

In any event, as stated above, the combination of references is not proper due to disqualification of the Ahmed patent. The present claimed invention and the Ahmed patent were, at the time Application No. 09/210,213 was made, owned or subject to an obligation of assignment by Lucent Technologies. Therefore, due to common ownership/assignment, the Ahmed patent is disqualified from being used in a rejection under 35 U.S.C. § 103(a).

Accordingly, Applicant respectfully requests withdrawal of the rejection.

Independent **Claims 13 and 20** have the same limitation as **Claim 1**; handoffs processed at a network layer. As stated and explained above, Kumaki does not teach this limitation for the above mentioned reasons. Furthermore, Ahmed is disqualified as a reference. Because claims 14-19 depend from Claim 13, these dependent claims are believed to be allowable by the same reasons set forth for Claim 1.

Independent **Claim 7** stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kumaki and Ahmed, in further view of Umeda.

As stated above, Applicant asserts that the Ahmed patent is an improper reference under 103(a) and therefore cannot be combined with the Kumaki patent for an obviousness rejection. Since the combination is improper, the Umeda reference cannot cure this defect.

Umeda teaches an arrangement for preventing disconnections during handovers, but does not specify a layer that handles handovers. Without identifying a layer, one skilled in the art would use conventional methods to assemble the arrangement. The Office has stated previously that handoffs in the prior art were processed at the data link layer, therefore it must be assumed that one skilled in the art would interpret Umeda as using the data link layer to accomplish handover. As stated above, a data link layer is not interchangeable for a network layer. Furthermore, using a data link layer involves management of two networks. Therefore, Umeda does not provide for a “handoffs processed at a network layer”.

Because Claim 7 ultimately depends from Claim 1, Claim 7 is allowable over the combination of this defect.

Claims 2, 3, 5, 6, 8, 9, 12 and 21 ultimately depend from Claim 1 and are allowable by virtue of this dependency. Additionally, these claims recite additional features that, when taken together with those of Claim 1, define

methods that are not taught or suggested by Kumaki. Specifically, the present claimed invention provides a specific mobility solution; Applicant's claimed host-based routing minimizes handoff notifications to the home agent and correspondent node, does not depend on a centralized routing mechanism, and operates at the network level so that no notification is required to nodes outside of the subnet. Kumaki does not teach or suggest this routing method, as the methods taught by Kumaki are dependent upon using a data link layer to realize faster transactions and handle higher overhead signaling, and depend on a centralized mechanism for routing that creates more complex infrastructure, requires maintenance of two or more networks and sends duplicate data transmissions.

Allowed Claims

Applicant appreciates the Office's indication that Claims 10 and 11 would be allowed if rewritten in independent form, including all limitations of the respective base and intervening claims.

However, Applicant believes that in light of the arguments presented above, amendment is not necessary.

Conclusion

In view of the foregoing amendments and remarks, Applicant submits that claims 1-3 and 5-21 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. If any issues remain that preclude issuance of this application, the Office is urged to contact the undersigned attorney before issuing a subsequent Action.

Respectfully Submitted,

Dated: 8-8-05

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